UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,358	12/12/2003	Mohsen Abdollahi	NGC-145/000312-040	3532

32205 7590 04/20/2005

PATTI & BRILL
ONE NORTH LASALLE STREET
44TH FLOOR
CHICAGO, IL 60602

EXAMINER	
TUCKER, WESLEY J	

ART UNIT	PAPER NUMBER
2623	

DATE MAILED: 04/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/734,358	ABDOLLAHI ET AL.	
	Examiner	Art Unit	
	Wes Tucker	2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☒ Claim(s) *10,12 and 20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *9-27-2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-9, 11, 14-19, 21 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,515,159 to Sites et al.

With regard to claim 1, Sites discloses an apparatus, comprising:

a computer component (fig. 1, elements 46) that receives one or more images of one or more packaging materials from one or more imaging components (column 1, lines 34-43);

wherein the computer component employs an analysis of the one or more images to make a determination of package integrity of the one or more packaging materials (column 1, lines 44-52 and column 2, lines 5-26).

With regard to claim 2, Sites discloses the apparatus of claim 1, wherein the computer component employs one or more algorithms to conduct the analysis of one or more of the one or more images to make the determination of the package integrity of the one or more packaging materials (column 2, lines 5-26).

With regard to claim 3, Sites discloses the apparatus of claim 1, wherein the one or more packaging materials comprise one or more seal regions,

wherein the package integrity comprises a seal region integrity (column 1, lines 37-39),

wherein the computer component employs the analysis of the one or more images to make the determination of the seal region integrity of the one or more seal regions (column 1, lines 44-46).

With regard to claim 4, Sites discloses the apparatus of claim 1, wherein the computer component employs one or more irradiation components to emit one or more radiation wavelengths to the one or more packaging materials (column 1, lines 41-43),

wherein the computer component employs the one or more imaging devices to create the one or more images (Fig. 1, elements 46 and 64).

With regard to claim 5, Sites discloses the apparatus of claim 4, wherein the one or more packaging materials allow a transmittance of one or more of the one or more radiation wavelengths (column 2, lines 1-5).

Sites further discloses wherein the computer component employs one or more of the one or more irradiation components to emit the one or more of the one or more radiation wavelengths for the transmittance through one or more of the one or more packaging materials (column 5, lines 35-40 and Fig. 7, elements 46, 72, 74, 18, and

124). Here Sites discloses that the master image processor or computer component controls the lighting source 124 that projects light through transparent material.

Sites further discloses wherein the one or more of the one or more radiation wavelengths reflect off a carrier of the one or more of the one or more packaging materials to the one or more imaging devices (Fig. 7, element 18). Sites discloses low incident angle light sources (18) designed to illuminate the object for inspection by reflecting light off the package as well as a light source for projecting light through the transparent package (124).

With regard to claim 6, Sites discloses the apparatus of claim 4, wherein the one or more packaging materials allow a transmittance of one or more of the one or more radiation wavelengths (column 5, lines 35-40),

wherein the computer component employs one or more of the one or more irradiation components to emit the one or more of the one or more radiation wavelengths for a transmittance through one of more of the one or more packaging materials; wherein the one or more of the one or more radiation wavelengths transmit directly through the one or more of the one or more packaging materials to the one or more imaging devices (column 5, line 57-column 6, line 2 and Fig. 7, elements 46, 124, 12, 14 and 36). Here Sites discloses that the master image processor (46) or computer component controls the lighting source (124) that projects light through transparent material or seal (12 and 14) and the imagers (36) capture that light.

With regard to claim 7, Sites discloses the apparatus of claim 4, wherein one or more of the one or more packaging materials allow a reflection of the one or more radiation wavelengths (column 3, lines 27-30);

wherein the computer component employs one or more of the one or more irradiation components to emit the one or more radiation wavelengths at an incident angle to the one or more of the one or more packaging materials (Fig. 4);

wherein upon the rejection of one or more of the one or more radiation wavelengths at an angle equal to the incident angle, the computer component employs the analysis to identify one or more dark regions in the one or more images, wherein the one or more dark regions indicate the package integrity to the computer component (column 8, lines 17-31). In line 22 of column 8, Sites refers to darkness, which is interpreted as a measure of both dark and bright areas.

With regard to claim 8, Sites discloses the apparatus of claim 4, wherein one or more of the one or more packaging materials allow a reflection of the one or more radiation wavelengths (column 3, lines 27-30);

wherein the computer component employs one or more of the one or more irradiation components to emit the one or more radiation wavelengths at a low incident angle to the one or more of the one or more packaging materials (Fig. 4);

wherein upon the reflection of one or more of the one or more radiation wavelengths different from the low incident angle, the computer component employs the analysis to identify one or more bright regions in the one or more images, wherein the

one or more bright regions indicate the package integrity to the computer component (column 8, lines 17-31). In line 22 of column 8, Sites refers to darkness, which is interpreted as a measure of both dark and bright areas.

With regard to claim 9, Sites discloses the apparatus of claim 4, wherein the computer component employs the one or more irradiation components to emit one or more of the one or more radiation wavelengths through one or more optical components (Fig. 7, elements 124 and 18). Here the light sources are interpreted as being emitted through glass, both the light source and the glass are interpreted as optical components.

With regard to claim 11, Sites discloses the apparatus of claim 9, wherein the computer component employs the one or more of the one or more irradiation components and the one or more optical components to create the one or more of the one or more radiation wavelengths, wherein the one or more of the one or more radiation wavelengths contact one or more of the one or more packaging materials (Fig. 7, elements 18, 124, and 46).

With regard to claim 14, Sites discloses the apparatus of claim 1, wherein the computer component receives the one or more images of the one or more packaging materials from the one or more imaging components to perform an automated

inspection of the package integrity of the one or more packaging materials (column 1, lines 20-35).

With regard to claim 15, Sites discloses a method, comprising the steps of:

employing one or more irradiation components to emit one or more radiation wavelengths to one or more packaging materials (Fig. 1, element 18 and column 1, lines 56-60);

receiving one or more images of the one or more packaging materials from one or more imaging components (Fig. 1, elements 36 and 46 and column 1, lines 44-46); and

employing one or more analysis algorithms on the one or more images to make a determination of a package integrity of the one or more packaging materials (column 1, lines 44-46).

With regard to claim 16, Sites discloses the method of claim 15, wherein the one or more packaging materials allow a transmittance of one or more of the one or more radiation wavelengths (column 5, lines 35-38), wherein the one or more imaging devices create the one or more images of the one or more packaging materials (Fig.7, element 36), wherein the step of receiving the one or more images of the one or more packaging materials from the one or more imaging components comprises the steps employing the one or more irradiation components to emit the one or more of the one or more radiation

wavelengths for the transmittance through the one or more packaging materials (Fig. 7, element 124 and column 5, lines 40-50); and

receiving the one or more images from the one or more imaging devices upon a reflection of the one or more of the one or more radiation wavelengths off a carrier of the one or more packaging materials to the one or more imaging devices (Fig. 7, elements 18 and 36 and column 5, lines 50-55).

With regard to claim 17, sites discloses the method of claim 15, wherein the one or more packaging materials allow a transmittance of one or more of the one or more radiation wavelengths (column 5, lines 35-45), wherein the one or more imaging devices create the one or more images of the one or more packaging materials (Fig. 7, elements 36), wherein the step of receiving the one or more images of the one or more packaging materials from the one or more imaging components comprises the steps of:

employing the one or more irradiation components to emit the one or more of the one or more radiation wavelengths for the transmittance through the one or more packaging materials (column 5, lines 40-45 and Fig. 7, element 124); and

receiving the one or more images from the one or more imaging devices images upon the transmittance of the one or more of the one or more radiation wavelengths through the one or more packaging materials to the one or more imaging devices (column 5, lines 27-35, Fig. 7, elements 124 and 36). Sites discloses that the method is performed for the transparent packages in the same way as for the opaque packages.

With regard to claim 18, Sites discloses the method of claim 15, wherein the one or more packaging materials allow a reflection of the one or more radiation wavelengths (column 5, lines 50-55 see low incidence angle lighting), wherein the step of employing the one or more analysis algorithms on the one or more images to make the determination of the package integrity of the one or more packaging materials comprises the steps of:

employing the one or more irradiation components to emit the one or more radiation wavelengths at an incident angle to the one or more packaging components (column 5, lines 50-55),

receiving the one or more images from the one or more imaging devices upon the reflection of one or more of the one or more radiation wavelengths at an angle equal to the incident angle (Fig.7, elements 18 and 36). Here the reflected angle off a flat surface is interpreted as equivalent to the incident angle.

Sites further discloses employing the one or more analysis algorithms to identify one or more dark regions of the one or more images (column 8, lines 17-23), and

employing the one or more dark regions of the one or more images to make the determination of the package integrity to the computer component (column 8, lines 24-30).

With regard to claim 19, Sites discloses the method of claim 15, wherein the one or more packaging materials allow a reflection of the one or more radiation wavelengths, wherein the step of employing the one or more analysis algorithms on the

one or more images to make the determination of the package integrity of the one or more packaging materials comprises the steps of:

employing one or more of the one or more irradiation components to emit the one or more radiation wavelengths at a low incident angle to the one or more packaging components (column 3, lines 27-33);

receiving the one or more images from the one or more imaging devices upon the reflection of one or more of the one or more radiation wavelengths at an angle different from the incident angle (Fig. 7, elements 18 and 36); and

employing the one or more analysis algorithms to identify one or more bright regions of the one or more images (column 8, lines 17-24),

employing the one or more bright regions of the one or more images to make the determination of the package integrity to the computer component (column 8, lines 23-26). In line 22 of column 8, Sites refers to darkness, which is interpreted as a measure of both dark and bright areas.

With regard to claim 21, Sites discloses the method of claim 15, wherein the one or more irradiation components comprise one or more fluorescing excitation sources (Fig. 7, elements 18 and 124), wherein the step of employing the one or more irradiation components to emit the one or more radiation wavelengths to the one or more packaging materials comprises the steps of:

employing a first optical component to allow a transmittance of one or more of the one or more radiation wavelengths from the one or more fluorescing excitation

sources through the one or more packaging materials (column 5, lines 41-55). Here optical components are interpreted as the assembly including a light source, a reflector, and light transmissive sections.

Sites further discloses employing a second optical component to allow one or more fluorescing wavelengths emitted by the one or more packaging materials to pass through to the one or more imaging devices (Fig. 7, elements 36). Optical components are considered inherent in the cameras.

With regard to claim 22, sites discloses an article, comprising:

one or more computer-readable signal-bearing media column 5, lines 1-10);

means in the one or more media for employing one or more irradiation components to emit one or more radiation wavelengths to one or more packaging materials (Fig. 1, elements 46, 78, 72, 74, and 18);

means in the one or more media for receiving one or more images of the one or more packaging materials from one or more imaging components (Fig. 1, elements 36, 64, 62, and 46); and

means in the one or more media for employing one or more analysis algorithms on the one or more images to make a determination of package integrity of the one or more packaging materials (column 4, lines 2-35).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 13 rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of U.S. Patent 5,515,159 to Sites et al. and U.S. Patent 4,747,299 to Fox et al.

With regard to claim 13, Sites discloses the apparatus of claim 1, wherein the computer component employs and analysis to determine package integrity by receiving images (column 1, lines 44-52 and column 2, lines 5-26).

Sites does not disclose wherein the computer component employs one or more material handling components to cause one or more deformations in one or more of the one or more packaging materials; and wherein the computer component receives one or more images of the one or more deformations from the one or more imaging components, wherein the computer component employs an analysis of the one or more deformations to make a determination of the package integrity of the one or more of the one or more packaging materials.

Fox discloses a method of testing a package seal by causing a deformation or pressure differential in order to test the integrity of the package seal (column 1, lines 43-65). Fox teaches that these kinds of seals are abundant in a variety of forms especially in perishable food products and the like (column 2, lines 42-49). In mechanically deforming package seals of this nature it becomes more evident that the seal lacks

integrity. Therefore it would have been obvious to one of ordinary skill in the art to deform the sealed package as taught by Fox in the imaging apparatus of Sites in order to better determine the package integrity.

Allowable Subject Matter

Claims 10, 12 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wes Tucker whose telephone number is 703-305-6700. The examiner can normally be reached on 9AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (703)308-6604. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Wes Tucker

2-23-05

AMELIA M. AU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600